

# California M E D I C I N E

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## EDITORIALS

### Current Trends in Research on Eclampsia

In dealing with eclampsia, a serious disease of unknown etiology, it seems proper to pause occasionally and to take stock of the direction in which current research efforts lead us. This is especially true when therapeutic implications are involved. There are four lines of investigation which deserve careful attention: (1) alterations of renal function leading to edema, (2) methods of protecting the liver against damage, (3) the cause and prevention of the convulsions, and (4) the role of the placenta in causing generalized vascular damage and multiple small thromboses.

The newer methods of investigating renal blood flow and glomerular filtration rates indicate that in preeclampsia and eclampsia there is not a renal "ischemia," but rather a slight increase in the rate of blood flow. The filtration of urine, on the other hand, is definitely impaired. The cause of this may be related to the diffuse thickening of the glomerular (filtering) membrane observed histologically. The only means that the body has of increasing the amount of urine formed, and thus preventing anuria, is either by raising the head of pressure within the glomerulus or by reducing the osmotic pressure of the blood. Thus the hypertension and the hypoalbuminemia associated with eclampsia may be compensatory mechanisms in some way effected by the kidneys in order to prevent such a catastrophe. Attempts to lower the blood pressure with drugs which further reduce the formation of urine (as with nitrates, veratrum viride, etc.) may be unwise. *The net effect of the reduced filtration rate associated with eclampsia is to increase the amount of sodium chloride (and water) obligatorily reabsorbed by the proximal tubules, and this now appears to be one of the primary causes of the edema.* Such a suggestion substantiates the well-known clinical observation that improvement of preeclampsia rarely occurs

until diuresis is established. We should redouble our efforts to promote the excretion of salt and water by the rigid restriction of sodium intake, the displacement of sodium by the judicious use of such salts as ammonium chloride, and by supplying sufficient water to prevent undue concentration of the urine. The latter is satisfactorily done by the administration of dextrose in distilled water by vein.

Current researches dealing with protection of the liver against toxic damage stress the desirability of such lipotropic factors as methionine, choline, lipocaic and inositol, in addition to the usual therapy with carbohydrates. Protein digests containing methionine would have the advantage of allowing the synthesis of protein, much needed in eclampsia, and could be administered orally or even by intubation if necessary. To date, there are no reports on the value of such materials in eclampsia, nor is there a commercial protein digest available which is sufficiently low in sodium (though one may soon be marketed). *The administration of essential amino acids and choline to patients with severe preeclampsia or eclampsia may become a valuable adjunct to our therapy.*

We call now upon the encephalographers who inform us that about ten per cent of the population at large have cerebral dysrhythmia; that these are the individuals who are most subject to epilepsy or to post-traumatic convulsions; and that two-thirds of women who give a history of eclampsia (instead of the expected ten per cent) have such abnormal brain wave patterns. *Inasmuch as about 10 per cent of women with preeclampsia develop convulsions, it is possible that these individuals are the unfortunate ones genetically endowed with cerebral dysrhythmia.* This obviously suggests that the administration of an anticonvulsant drug more potent than the barbiturates (such as sodium 5, 5-diphenyl hydantoinate

Dilantin) in all cases of non-convulsive toxemias early in the course of the disease may lower the incidence of actual eclampsia. It may be years, of course, before we obtain the report on a series of cases sufficiently large to be of significance.

Lastly we come back to a theory of Dienst's in 1912, the work of Obata in 1919, and the recent repetition of Obata's work by Schneider showing that the principle of the human placenta which is lethal to animals upon intravenous injection is thromboplastin. Human serum contains an "antithromboplastin," and we recall that Obata, and later Dieckmann, found that women with preeclampsia and eclampsia have a reduced amount of this inhibitor substance in their serum. *The slow liberation of unopposed thrombokinase into the maternal circulation by the placenta* (one of the richest sources of this substance in the body)—*under some such stimulus perhaps, as "ischemia" of the gravid uterus—might allow a slow deposition of fibrin upon the intima of*

*small blood vessels, cause capillary thromboses and periportal hepatic lesions, and thus account for at least some of the major pathologic changes of eclampsia.* For direct proof of this hypothesis, it remains to quantitate the amounts of circulating thromboplastin and its inhibitor in the plasma of eclamptic women. The biocatalyst, thrombokinase, is a molecule of such tremendous size that it might be expected to remain in the circulating blood for many days after delivery, thus accounting for the occurrence of continued damage in the immediate puerperium. An obvious specific "antidote" for thromboplastin is heparin, and the few cases in which it has been used warrant some enthusiasm for the future. The obvious dangers of heparinization of a pregnant or puerperal woman, on the other hand, should be sufficient to warn all practitioners against its use until the possible value of such therapy is well established by rigidly controlled clinical experiments in some research institution.



## The A.M.A. Centennial

Celebration of the first century's existence of the American Medical Association was completed in Atlantic City in mid-June and from the scientific side of the event there seems little to be desired. Starting with an interdenominational religious service, carrying on through a galaxy of visiting dignitaries from all corners of the world, the meeting presented a series of scientific papers and scientific and technical exhibits which could easily rate top billing in any scientific gathering the world has yet seen. The planners and providers of such a program merit the respect and the thanks of the entire medical profession, not only in this country but in both hemispheres.

On the business side of the meeting, the side for which the California Medical Association regularly sends its delegates into action, there is room for both rejoicing and sorrow. On the happier side, California's Dr. Dwight H. Murray was elected to a full five-year term as a Trustee of the A.M.A. in a voting contest which favored the Napa physician by a four-to-one margin. This is ample evidence of respect for the character, capacity and sound judgment of our fellow practitioner, as well as for the integrity of the entire California profession. Other A.M.A. election returns tend to bear out this assay of the respect for sound, progressive policies which Californians have long espoused in national medical circles.

The reverse of the picture shows an unsettled state of public relations of the A.M.A., a condition aggravated by the unfortunate events leading up to the resignation of both the outside public relations counsel and the public relations expert employed as an ex-

ecutive assistant to the secretary-general manager of the Association. Further provocation on this score came from a renewed approval given by the House of Delegates to the National Physicians' Committee despite an evident disposition on the part of a large minority in the House for the A.M.A. to do its own job in the public relations field.

Out of these decisions, which in the democratic manner are binding on all members until and unless reversed, there comes one lesson which we hope will not be lost to sight. The important part of the entire public relations matter lies in the over-all problem and not in the personalities involved. The public relations counsel and expert have turned in their resignations; the public relations problem remains. No matter what events brought about these resignations, it is obvious that these individuals performed a valuable service during their terms with the A.M.A. and it is sincerely to be hoped that their contributions toward clearer and better public relations will not be discarded.

In the Rich report released last year and in the programs developed by the counsel firm and the public relations expert in the A.M.A. office, there are suggestions of value to American medicine. These should and must be utilized, salvaged from what might otherwise appear to be a useless wreck. Used objectively, they may well prove to be the beacon for guiding American medicine into paths of true public relations, true respect by and for the American public.

The rider may have come a cropper but that is no reason for shooting the horse.